

REMARKS

Claims 4 and 7 are pending in this application, with claim 4 being independent. Claims 1-3, 5, and 6 have been canceled without disclaimer of the subject matter and/or prejudice. Claims 4 and 7 have been amended. Care has been taken to avoid introduction of new matter. Favorable reconsideration of the application in light of the following comments is respectfully solicited.

Claim Rejections – 35 U.S.C. § 103

Claims 4 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of U.S. Patent No. 6,201,435 (“Chou”), and further in view of U.S. Patent Number 6,891,433 (“Schrader”).

Applicants respectfully traverse this rejection because at a minimum, AAPA, Chou, and Schrader, either alone or in combination, fail to describe or suggest a reference voltage generating circuit that includes, among other features, a start-up circuit including a P-type transistor having a gate terminal connected to the reference voltage output terminal and a current generating element provided between a source terminal of the P-type transistor and a drain terminal of the second P-type transistor of the bandgap reference circuit, wherein the current generating element is a resistive element, as recited in claim 4.

The Office Action concedes that Cho and AAPA fail to describe or suggest the above-recited feature of claim 4. *See e.g.*, Office Action at page 5, lines 16-20. However, the Office Action asserts that Schrader describes this feature. In particular, the Office Action asserts that a transistor 316 shown in FIG. 3 of Schrader can be a current generation element and can act as a

resistive element, as recited in claim 4. *See e.g.*, Office Action at page 5, line 21 to page 6, line 3. Applicants disagree because the alleged transistor 316 is not a current generation element.

Referring to column 4, lines 44-49, Schrader discloses that the drains of transistors 316, 317 are high impedance outputs of the cascode current source. Applicants respectfully submit that in order to operate transistor 318 as an ideal current source (e.g., to obtain almost infinite output impedance), transistor 316 is cascode connected. With such a configuration, voltage for the source and drain terminals of transistors 316 are indeterminate. In this indeterminate state, transistor 316 fails to have a current generation function, and therefore, fails to act like a current generation element recited in claim 4.

Furthermore, the alleged transistor 316 is provided between a drain terminal of the PMOS transistor 318 and a drain terminal of NMOS transistor 314 and it is not connected between a source terminal of a PMOS transistor and a drain terminal of a PMOS transistor. That is, transistor 316 is connected between two different types (e.g., PMOS and NMOS) of transistors and not between two transistors of the same type (e.g., PMOS).

Accordingly, Schrader in the relied upon portion fails to describe or suggest a reference voltage generating circuit that includes, among other features, a start-up circuit including a P-type transistor having a gate terminal connected to the reference voltage output terminal and a current generating element provided between a source terminal of the P-type transistor and a drain terminal of the second P-type transistor of the bandgap reference circuit, wherein the current generating element is a resistive element, as recited in claim 4.

The Office Action also points to an article entitled “Design and Analysis of Integrator-Based Log-Domain Filter Circuits” (hereinafter “Roberts”) to suggest that when a gate of a transistor (e.g., the alleged transistor 316) is connected to a fixed constant voltage (e.g., the

alleged bias voltage V_{b2}), the transistor acts as a resistor. In Roberts, the transistor in which defined voltages V_1 , V_2 , and V_c are respectively supplied to its source, drain, and gate terminals may function as a resistive element. However and in sharp contrast to Roberts, in the alleged transistor 316 of Schrader, voltages for the source and drain terminals are indeterminate. Therefore, Applicants respectfully submit that the alleged transistor 316, even though it appears to have a fixed gate voltage, fails to act as a resistive element as the alleged transistor of Roberts and fails to have a current generating function as recited in claim 4.

As such, the proposed addition of subject matter from Roberts does not remedy the shortcomings of AAPA, Chou, and Schrader to describe or otherwise suggest a reference voltage generating circuit that includes, among other features, a start-up circuit including a P-type transistor having a gate terminal connected to the reference voltage output terminal and a current generating element provided between a source terminal of the P-type transistor and a drain terminal of the second P-type transistor of the bandgap reference circuit, wherein the current generating element is a resistive element, as recited in claim 4.

For at least the foregoing reasons, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 4.

Dependent Claims

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Because claim 4 is allowable for the reasons set forth above, it is respectfully submitted that claim 7 dependent thereon is also allowable. In addition, it

is respectfully submitted that claim 7 is allowable based on its own merits by adding novel and non-obvious features to the combination.

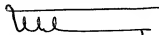
Based on the foregoing, it is respectfully submitted that all pending claims are patentable over the cited prior art. Accordingly, it is respectfully requested that the rejections under 35 U.S.C. § 103 be withdrawn.

Conclusion

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,
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